Memorandum of Understanding
Between the
Federal Communications Commission
and the
National Telecommunications and Information Administration
Addressing the Aeronautical Mobile-Satellite Service
In the 14.0 – 14.5 GHz Band

The Federal Communications Commission ("FCC") and the National Telecommunications and Information Administration ("NTIA") agree to this Memorandum of Understanding (MoU) related to World Radiocommunication Conference-2003 Agenda Item 1.11. Agenda Item 1.11 calls for the consideration of "possible extension of the allocation to the mobile-satellite service (Earth-to-space) on a secondary basis in the band 14.0-14.5 GHz to permit operation of the aeronautical mobile-satellite service as stipulated in Resolution 216 (Rev. WRC-2000)." Extension of this allocation will provide an opportunity for companies to provide broadband internet access to commercial and government airline passengers.

Because the 14.0-14.5 GHz band is allocated in the United States for government and non-government uses (*See* 47 C.F.R. § 2.106 (2001)), the FCC and NTIA have developed this MoU to ensure protection of two important government operations in the band. First, the Space Research Service has a secondary allocation in a portion of the band. Pursuant to this allocation, the National Aeronautics and Space Administration (NASA) uses a portion of the band as a downlink for its Tracking and Data Relay Satellite System (TDRSS) with earth stations located in Guam and White Sands, New Mexico. Second, the National Science Foundation (NSF) operates Radio Astronomy (RA) Services on a secondary basis in the upper portion of the band (14.47-14.5 GHz) internationally and operates under US203 in the United States.

In the United States, the FCC recently issued the Boeing Company (Boeing) a license to operate up to 800 technically identical transmit-and-receive mobile earth stations aboard aircraft in the 11.7-12.2 GHz and 14.0-14.5 GHz bands. *See The Boeing Company*, Order and Authorization, DA 01-3008 (released December 21, 2001). The license contained several conditions, including the requirement that the licensee not cause harmful interference to any authorized government or non-government station operating in these bands and it cease operations upon notification of such harmful interference. Boeing's license is further conditioned on successful completion of coordination with government users through the NTIA's Frequency Assignment Subcommittee of the Interdepartment Radio Advisory Committee (IRAC), designing and operating its system in accordance with its Technical Operational Coordination Agreement with NSF to facilitate the protection of Radio Astronomy operations in the 14.47-14.5 GHz band, and agreeing not to constrain deployment of additional government stations operated by NASA in the Space Research Service

In order to finalize agreement between the FCC and NTIA on a WRC-2003 proposal, the NTIA and FCC have reached the following understanding

1 The FCC will seek to protect all authorized NASA and NSF operations in the 14.0-14.5 GHz band from interference by any current or future AMSS systems that the Commission authorizes

2 The FCC has jurisdiction over the operation of aircraft earth stations (except for Government radio stations described in Section 305 of the Communications Act) operating in the 14.0-14.5 GHz band on aircraft flying over the United States, its territories and possessions, such as Guam, and all U.S. territorial waters (defined as extending 12 nautical miles from the baseline of these geographic areas). *See* 47 U.S.C. §§ 152(a), 153(17), 153(51), 301. Therefore, operation of aircraft earth stations flying over the United States requires authorization by the FCC, except as provided in Section 303(t) of the Communications Act.

3 Until final rules are adopted relating to allocation changes in the 14-14.5 GHz band or licensing of AMSS terminals in that band, the FCC agrees to place the following conditions on any authorization issued to any other entity for a similar service:

- The system shall be designed and operated so as not to cause harmful interference to TDRSS or Radio Astronomy operations in the United States;
- The system, as a non-conforming user, must accept any interference from any authorized station; and
- The system shall not constrain future deployment of additional Federal Earth Stations in the space research and radio astronomy services authorized pursuant to existing allocations.

4 The FCC agrees to coordinate with NTIA on any rules relating to licensing of AMSS terminals in the 14.0-14.5 GHz band in accordance with normal procedures. The FCC will endeavor to reflect in its decisions conditions and constraints that explicitly protect NASA, NSF and other government operations (*i.e.*, ITU-R Recommendation RA. 769 for Radio Astronomy and ITU-R Recommendations SA.510, SA.1017, SA.1018, SA.1155, SA 1414, M.AMSS for TDRSS earth stations, and Boeing's Technical Operational Coordination Agreement with NSF, dated 13 December 2001, and the letter of guidance provided to Boeing by NASA, dated December 18, 2001).

5 The FCC will work to assist NTIA with technical expertise on AMSS operations in any bilateral discussions with Mexico and Canada regarding protection of TDRSS and Radio Astronomy services

This MoU shall become effective on the last signature date below

For FCC

7-8-02

Tom Tycz
Chief, Satellite Division,
International Bureau, FCC

For NTIA

Fred Wentland
Director, Spectrum Plans and Policies,
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